

ROYLE'S "ILLUSTRATIONS OF THE BOTANY OF THE HIMALAYAN MOUNTAINS"

WILLIAM T. STEARN

THE "Illustrations of the Botany and other Branches of the Natural History of the Himalayan Mountains, and of the Flora of Cashmere" (2 vols. quarto; London) by John Forbes Royle (1799–1858) stands with Roxburgh's "Plants of the Coast of Coromandel" (1795–1819), Wallich's "Plantae Asiaticae rariores" (1830–1832), Wight's "Icones Plantarum Indiae Orientalis" (1838–1853),¹ and Wight's "Illustrations of Indian Botany" (1840–1850) as one of the most important illustrated works on the flora of India. Royle was a pioneer economic botanist. His work is not so much a descriptive systematic flora as an attempt to reveal "the immense resources of British India, both as regards whatever is necessary for the Agriculture, Manufactures, and Internal trade of the people, as for the supply of a much extended External Commerce." In it "the Geographical Distribution of Plants, as connected with Climate, is considered, their Useful Properties detailed, and the principles which should guide their culture in new situations deduced." Medicinal plants receive special attention. Many new species came to light during the preparation of the work and are concisely described in its pages. It was issued in eleven parts, costing £1. each, between 1833 and 1840. An unnumbered page of the Introduction states the text-content of each part and its date of issue but gives no information about the plates. This is an omission of some importance. The plates illustrate in colour many of the new species described in the text; they sometimes appeared before the corresponding descriptions and, because they contain figures of floral dissections, the valid publication of certain botanical names dates not from the text but from the earlier issued plates.² As Dr. T. A. Sprague remarks, the most satisfactory way to determine the details of issue of a work of this kind is to examine a copy still in the original wrappers. No such copy of Royle's work being known, he endeavoured to ascertain the issue of the plates by a survey of contemporary journals. Notices in Loudon's *Gardeners' Magazine*, vols. 9–16 (London, 1833–1840), enabled him to fix with precision the issue of 30 out of a total 100 plates. He assumed that the remaining 70 plates were issued in numerical sequence. Since the publication of

¹For dates of publication of Wight's "Icones" see Merrill in *Jour. Arnold Arb.* **22**: 222–224. 1941.

²In this respect Royle's "Illustrations" is by no means unique. Webb and Berthelot's "Histoire naturelle des Iles Canaries" (1835–1850) is another important work in which a number of names were first published on the plates; for fuller details see Stearn in *Jour. Soc. Bibl. Nat. Hist.* **1**: 58–59. 1937.

Sprague's paper ("The Dates of Publication of Royle's Illustrations," in *Kew Bull.* **1933**: 378-390. 1933), parts 1-10 in wrappers as issued have come into the present writer's hands. They show that *the plates were not issued in numerical sequence*. This find necessitates some modification, fortunately not extensive, of Sprague's account.

The *contents and dates of publication of the parts* are as follows:

- Part I. (Sept. 1833): pp. 1-40; pls. 4, 11-18, 22.
 Part II. (March, 1834): pp. v-xii, 41-72; pls. 1, 19-21, 23-28.
 Part III. (June, 1834): pp. xiii-xx, 73-104; pls. 2, 5, 29, 31-35, 37, 38.
 Part IV. (Sept. 1834): pp. 105-136; pls. 30, 39, 40, 42, 44-46, 64, 76 as 75 (*Primula*), 78.
 Part V. (Jan. 1835): pp. 137-176; pls. 3, 41, 48-51, 57, 62, 63, 74.
 Part VI. (April, 1835): pp. 177-216; pls. 7, 36, 43, 55, 56, 58, 60, 61, 75 as 75a (*Phlomis*, *Salvia*), and View of the Himalayan Mountains (Frontispiece to Vol. 1).
 Part VII. (Aug. 1835): pp. 217-248; pls. 8, 9, 47, 52, 59, 65, 67-69, 71, 77.
 Part VIII. (Dec. 1835): pp. 249-288; pls. 53, 54, 66, 70, 72, 73, 79 (63a), 80, 87, 88.
 Part IX. (May, 1836): pp. 289-336; pls. 10, 81, 82, 83 (*Procris*), 84-86, 90, 100 (83, *Putranjiva*).
 Part X. (Feb. 1839): pp. 337-384; pls. 89, 91-96, 98 (84a), 99 (78a), and Plan of the H.E.I.C. Botanic Garden at Saharunpore (Frontispiece to Vol. 2).
 Part XI. (1840, before July): pp. xxi-lxxx, 385-472, title-pages, dedications, preface, synoptic table of contents, list of plates, list of plants figured; pls. 6, 97 [details of this part obtained from Loudon, *Gard. Mag.* **16**: 348. 1840 (July), Sprague in *Kew Bull.* **1933**: 382. 1933].

Hence the *dates of the publication of the plates and the parts* in which they were contained are as follows:

Plate 1 (II, March, 1834), 2 (III, June, 1834), 3 (V, Jan. 1835), 4 (I, Sept. 1833), 5 (III, June, 1834), 6 (XI, 1840), 7 (VI, April, 1835), 8-9 (VII, Aug. 1835), 10 (IX, May, 1836), 11-18 (I, Sept. 1833), 19-21 (II, March, 1834), 22 (I, Sept. 1833), 23-28 (II, March, 1834), 29 (III, June, 1834), 30 (IV, Sept. 1834), 31-35 (III, June, 1834), 36 (VI, April, 1835), 37-38 (III, June, 1834), 39-40 (IV, Sept. 1834), 41 (V, Jan. 1835), 42 (IV, Sept. 1834), 43 (VI, April, 1835), 44-46 (IV, Sept. 1834), 47 (VII, Aug. 1835), 48-51 (V, Jan. 1835), 52 (VII, Aug. 1835), 53-54 (VIII, Dec. 1835), 55-56 (VI, April, 1835), 57 (V, Jan. 1835), 58 (VI, April, 1835), 59 (VII, Aug. 1835), 60-61 (VI, April, 1835), 62-63 (V, Jan. 1835), 64 (IV, Sept. 1834), 65 (VII, Aug. 1835), 66 (VIII, Dec. 1835), 67-69 (VII, Aug. 1835), 70 (VIII, Dec. 1835), 71 (VII, Aug. 1835), 72-73 (VIII, Dec. 1835), 74 (V, Jan. 1835), 75 as 75a (VI, April, 1835), 76 as 75 (IV, Sept. 1834), 77 (VII, Aug. 1835), 78 (IV, Sept. 1834), 79-80 (VIII, Dec. 1835), 81-86 (IX, May, 1836), 87-88 (VIII, Dec. 1835), 89 (X, Feb. 1839), 90 (IX, May, 1836), 91-96 (X, Feb. 1839), 97 (XI, 1840), 98 as 84a, 99 (X, Feb. 1839), 100 as 83 (IX, May, 1836).

The *dates of publication of Royle's new species* can be readily ascertained from the above. As Sprague points out, the new species figured by Royle "fall into two categories: (1) those with figures accompanied by analyses, which date from the publication of the plate, where this is earlier than the corresponding text; (2) those without analyses, which date from the publication of the description (if any) in the text." Of the dates which Sprague gives for the 134 new species figured by Royle, only 24 need amendment. The following are corrected citations for these:

- Aplotaxis gnaphaloides* DC. ex Royle, t. 59, sine anal. (Aug. 1835), p. 251, nomen (Dec. 1835); DC. Prodr. **6**: 542 (Jan. 1837),³ as *A. gnaphalodes*.
- Astragalus Grahamianus* Royle, p. 199, t. 36 (April, 1835).
- Campanula cashmeriana* Royle, t. 62 (Jan. 1835), pp. 253–254 (Dec. 1835).
- Cerasus cornuta* Wall. ex Royle, t. 38 (June, 1834), pp. 205, 207 (April, 1835).
- Chaptalia gossypina* Royle, p. 18, nomen (Sept. 1833), p. 246, t. 59 (Aug. 1835), pp. 250, 251 (Dec. 1835).
- Circaea cordata* Royle, p. 211, t. 43 (April, 1835).
- Codonopsis rotundifolia* Royle, t. 62 (Jan. 1835), pp. 253–254 (Dec. 1835).
- Cucumis pseudo-Colocynthis* Royle, pp. 218, 220, t. 47 (Aug. 1835).
- Cyanathus lobatus* Royle, t. 69 (Aug. 1835), p. 309 (May, 1836).
- Dendrobium alpestre* Lindley ex Royle, pp. 362, 365, t. 88 (Dec. 1835), p. 370 (Feb. 1839), non Swartz (1799).
- Deutzia corymbosa* R. Brown ex Royle, t. 46 (Sept. 1834), p. 216 (April, 1835).
- Gaultheria trichophylla* Royle, t. 63 (Jan. 1835), pp. 257–260 (Dec. 1835).
- Holostemma Brunonianum* Royle, p. 276, nomen, t. 66, sine anal. (Dec. 1835), Decaisne in DC. Prodr. **8**: 533 (March, 1844).
- Kohautia coccinea* Royle, p. 241 (Aug. 1835), t. 53 (Dec. 1835).
- Lonicera bracteata* Royle, pp. 236–237 (Aug. 1835), t. 53 (Dec. 1835).
- Osmorrhiza laxa* Royle, p. 233, t. 52 (Aug. 1835).
- Picrorhiza Kurroa* Bentham in Royle, t. 71 (Aug. 1835), p. 291 (May, 1836); Bentham, Scroph. Ind. p. 47 (? Aug. 1835).
- Primula elliptica* Royle, t. 76 as t. 75 (Sept. 1834), pp. 310, 311 (May, 1836).
- Primula rosea* Royle, t. 76 as t. 75 (Sept. 1834), p. 311 (May, 1836).
- Prinsepia utilis* Royle, t. 38 (June, 1834), pp. 202, 206 (April, 1835).
- Rheum spiciforme* Royle, p. 37, nomen (Sept. 1833), t. 78 (Sept. 1834), pp. 315, 316, 318 (May, 1836).
- Roscoea alpina* Royle, p. 19, nomen (Sept. 1833), pp. 357, 361, t. 89 (Feb. 1839).
- Roscoea lutea* Royle, p. 361, t. 89, "named *R. spicata* in plate, by inadvertence" (Feb. 1839).
- "*Roscoea purpurea*" Royle, pp. 357, 361, t. 89 (Feb. 1839), non Smith (1806).

Plate 92 exists in three states. One has the name *Lilium Thomsonianum* in lithographed lettering (e.g. at Royal Botanic Gardens, Kew; Arnold Arboretum). Another has the name *Fritillaria Thomsoniana* instead, the word *Fritillaria* and the final *a* of *Thomsoniana* being handwritten but *Thomsonian* lithographed (e.g. at Lindley Library of Royal Horticultural Society; Linnean Society of London; British Museum, Bloomsbury; British Museum [Natural History], S. Kensington; University Library, Cambridge, England; Royal Botanic Garden, Edinburgh; Bodleian Library, Oxford). A third state has the name *Fritillaria Thomsoniana* lithographed throughout and the letters more evenly spaced than in the second state (e.g. at British Museum [Natural History]; Botany School, Cambridge, England; Cornell University). This plate was issued in February, 1839, in part 10, on the back wrapper of which it is listed as *Fritillaria Thomsoniana*; the corresponding letter-press (under the name *Fritillaria Thomsoniana*) was issued in 1840 in part 11. It would appear that the plate was originally lettered *Lilium Thomsonianum*; then, following David Don's decision that the plant depicted belonged to the genus *Fritillaria*, the word *Lilium* was erased from the plates already printed and

³For dates of publication of De Candolle's "Prodromus," see Stearn in *Candollea* **8**: 1–4. 1939, and in *Jour. Bot.* **79**: 27. 1941.

coloured and the word *Fritillaria* was written in its place, the final *m* of *Thomsonianum* being likewise erased and the *u* converted into an *a*; for later issues the name *Fritillaria Thomsoniana* was completely lithographed anew. The copies at Kew and the Arnold Arboretum seem to have escaped correction. The plant is now referred to *Notholirion*, a genus intermediate between *Lilium* and *Fritillaria*; see Grove and Cotton, Suppl. to Elwes, Mon. Lilium, p. 129. 1940.

Royle was born at Cawnpore in 1799 and educated at Edinburgh. He was appointed assistant surgeon on the Hon. East India Company's Bengal establishment in March, 1820, became curator of the Saharunpur Botanic Garden in 1823, and retired to England in 1831. From 1837 to 1856 he was professor of materia medica at King's College, London. Economic Botany, as the pages of his "Illustrations" abundantly testify, was his ruling interest, and he played a part in extending the cultivation of tea and cotton in India. Bentham, de Candolle, David Don, Hooker, and Lindley helped him with the classification and naming of his material. From 1851 until his death in 1858 he was secretary of the Horticultural Society of London.

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